REMARKS

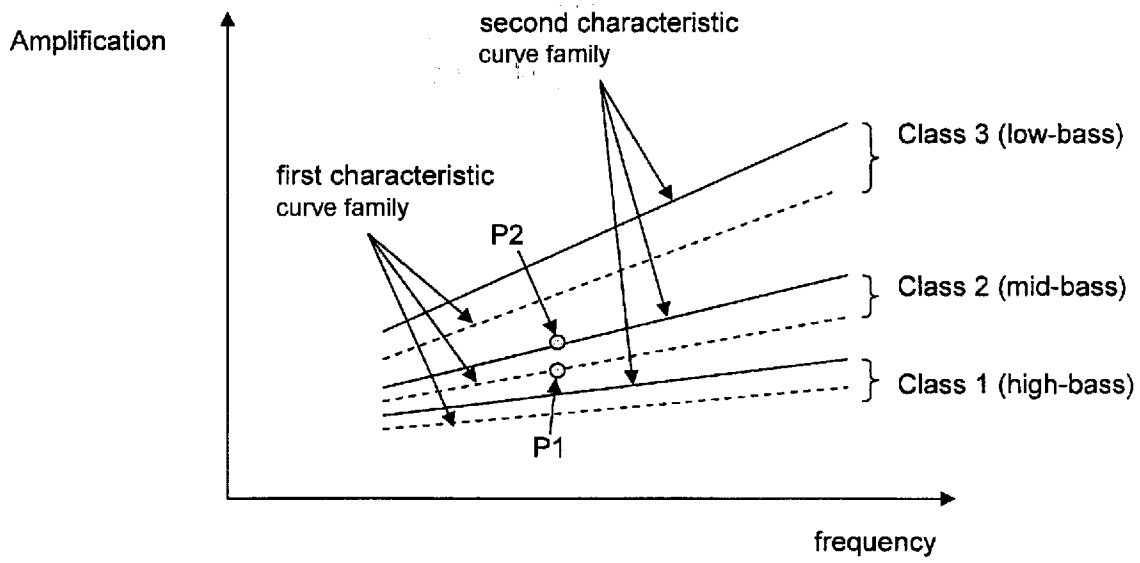
Claims 1-14 are pending in the application. The claims were rejected in the OA as follows.

Claims / Section	35 U.S.C. Sec.	References / Notes
1–3, 5–10, & 12–14	§102(b) Anticipation	• Mangold, et al. (U.S. Patent No. 4,972,487).
4 & 11	§103(a) Obviousness	• Mangold, et al. (U.S. Patent No. 4,972,487); and • Levitt, et al. (U.S. Patent No. 4,731,850).

Applicant thanks the Examiner for conducting a telephone interview with Applicant's representative and discussing subject matter that could serve to distinguish over the art of record. Applicant has amended claim 1 (and the remaining independent claims accordingly) to further define the scope of the invention, and provides the following discussion distinguishing the present invention, with claims as amended, from the art cited against it.

The amended claim language includes an element pertaining to the "characteristic curve family". This language is the more conventional term for language originally translated in the specification as "characteristic line field". The following discussion is provided by way of clarification only, and does not introduce new matter.

The following figure shows such characteristic line fields or curve families.



A characteristic curve family consists of several curves. In the example of the above figure, the first characteristic curve family consists of three dashed curves. In the present case, one curve represents the function between frequency and amplification. The bottom line of the dashed curves shows the function of the amplification over the frequency for a class 1 hearing situation. For example, this class 1 may be a high-bass-situation. The second dashed line represents the amplification-frequency-function for a class 2 hearing situation (e.g., mid-bass-situation). The top dashed line represents the amplification-frequency function for a class 3 hearing situation (e.g., low-bass-situation).

If such first characteristic curve family is implemented in a hearing aid and a classifier would classify the hearing situation as a class 1 situation, the hearing aid takes the bottom dashed line for amplification. If the classifier classifies the hearing

situation as a class 2 situation, the hearing aid takes the second dashed line for amplification, and so on.

As claimed in the amended independent claims (with reference to claim 1), a pre-defined first characteristic curve family is implemented in a hearing aid. As shown in the example above, the hearing aid might use three different amplification curves in this curve family (illustrated as dashed lines) depending on the output of the classifier. Unfortunately, the adjustment of the hearing aid with the first characteristic curve family might not be very comfortable for the user. Therefore the user will adapt the amplification at his or her option.

For instance, the user is in a mid-bass-situation and feels that the amplification is too low (operating under the first characteristic curve family, situation class 2, mid-bass). He will manually increase the amplification from point P1 (see the above figure) to point P2. Based on this point P2, the hearing aid then automatically calculates a second characteristic curve family, replacing the first characteristic curve family. Thus, if the user is in a low-bass-situation later (situation class 3), the hearing aid will operate under the top curve (solid line) of the second characteristic curve family. In other words, the hearing aid automatically calculates a second characteristic curve family on the basis of the manual input (from P1 to P2).

Focusing now on the elements of amended claim 1, according to the first element, a setting value is manually input in a first environment situation (e.g., situation class 2, mid-bass) and with a starting first characteristic curve family. In the example illustrated in the figure, the user inputs the amplification at point P2 (see also paragraph [0015] and block 1 of Figure 1 of the present application).

The second element of claim 1 concerns the measurement of a sound quantity concerning the first environment situation. In the example of the figure this means that the hearing aid determines the class of the situation (e.g. class 2, mid-bass; compare paragraph [0015] and block 3 of Figure 1).

According to the third element of claim 1, a new characteristic curve family is automatically calculated on the basis of the desired setting value (P2) and the first environment situation (class 2, mid-bass). In the example illustrated in the above figure, the second characteristic curve family is calculated on the basis of point P2 (i.e., the amplification value) and the information about the hearing situation, i.e., class 2, mid-bass. In other words, the complete new characteristic curve family is predicted/calculated on the basis of the setting value (P2) and the corresponding sound quantity of the environment situation (compare paragraph [0016] and block 4 of Figure 1). It can also be gathered from the above figure that a plurality of environment situations (classes) with corresponding amplifications are associated in the characteristic curve family (see the fourth element of amended claim 1).

Now, the operation of the hearing aid is continued utilizing the newly determined characteristic curve family. Therefore, according to the fifth element of amended claim 1, a sound quantity of the axial environment situation has to be measured. In the example of the above figure, this means that the class of the actual hearing situation has to be determined (see paragraph [0017] and block 5 of Figure 1).

Finally, in the sixth element of amended claim 1, the curve of the second characteristic curve family is used when it is determined which situation class is used for amplifying the input signals, i.e., the amplification of the hearing device is automatically set

with regard to the second (actual) environment situation, on the basis of the new (second) characteristic curve family.

Thus a user who adjusts the parameter from P1 to P2 in situation class 2 (mid-bass), affects not only the characteristic curve for situation class 2 at a subsequent time, but also affects the characteristic curve for situation class 1 (high-bass). Mangold and Levitt do describe an adaptation programming parameters based on measurements derived from microphone inputs (Mangold at 3:60–66; Levitt at 5:60 – 6:54), but do not take into account the combination of manual entry of a desired setting value and then adapting a family of curves so that changes apply in other situation classes. The independent claims have been amended to clarify this distinction.

During the telephone interview, there was some confusion as to the timing of the automatic calculations—however, based on the description above, it is clear that the calculation of the new characteristic curve family only need to take place sometime after the manual entry of the desired setting value and before a second subsequent situation is encountered—the specific timing is thus irrelevant. A "temporal weighting of learning steps" is not necessary since the new characteristic curve family is only calculated on the basis of the manually set value and the actual environment situation at the time the manually set value is entered. This second characteristic curve family may be obtained by calculating the curve family for the very first time or by shifting or transforming a first characteristic curve family to the second characteristic line field. An interpolation, while not precluded, is not necessary.

For these reasons, and by virtue of the amendments made in the independent claims, Applicant asserts that the presently claimed invention is not

anticipated or obviated by either the Mangold or Levitt references, alone or in combination, and respectfully requests that the 35 U.S.C. §§102, 103 rejections be withdrawn from the application.

Any shortages of fees due may be charged to, and any overpayments may be credited to, deposit account no. 50-1519.

CONCLUSION

Inasmuch as each of the rejections have been overcome by the amendments and arguments presented, and all of the examiner's suggestions and requirements have been satisfied, it is respectfully requested that the present application be reconsidered, the rejections be withdrawn and that this application be passed to issue.

Respectfully submitted,

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